CLAIMS

I claim:

1. A device for tightening a mounting member relative to a tubular receiver, wherein at least a portion of the mounting member is received within a passage defined by the tubular receiver, comprising:

a cross member extending through an interior defined by the mounting member;

an opening in the mounting member;

an engagement member movably mounted within the interior of the mounting member; and

an operating arrangement interconnected with the engagement member for imparting movement to the engagement member;

wherein the operating arrangement and the engagement member are configured and arranged to move the engagement member between an operative position in which the engagement member bears against the cross member and extends through the opening in the mounting member into engagement with the receiver to urge an area of the mounting member against one or more internal surfaces defined by the receiver, and an inoperative position in which the engagement member is moved out of engagement with the receiver.

2. The device of claim 1, wherein the tubular receiver comprises a vehicle-mounted hitch receiver.

3. The device of claim 2, wherein the hitch receiver and the mounting member define aligned openings when the mounting member is positioned within the passage of the hitch receiver, and wherein the cross member comprises a pin that extends through the aligned openings in the hitch receiver and the mounting member for preventing withdrawal of the mounting member from the passage of the hitch receiver.

4. The device of claim 1, wherein the engagement member comprises a cam having first and second spaced apart areas that are configured such that, when the cam is in the operative position, the first area bears against the cross member and against an internal

surface defined by the mounting member and the second area extends through the opening in the mounting member into engagement with the receiver.

5. The device of claim 4, wherein the operating arrangement is carried by the mounting member, and includes a manually operable input member secured to the mounting member, and an actuator member connected between the input member and the cam, wherein manual operation of the input member causes the actuator member to move the cam between the operative and inoperative positions.

6. The device of claim 5, wherein the cam includes limiting structure that interacts with the actuator member for limiting the range of movement of the cam between the operative and inoperative positions.

7. The device of claim 5, wherein the mounting member defines an outer end located exteriorly of the passage defined by the hitch receiver, wherein the input member is mounted to the outer end of the mounting member and wherein the actuator member comprises an axially extending actuator rod that extends through the interior of the mounting member.

8. The device of claim 7, wherein the input member is rotatably mounted to the outer end of the mounting member, and wherein the actuator rod and the input member are interconnected via a threaded connection such that rotation of the input member causes axial movement of the actuator rod that imparts movement to the cam for moving the cam between the operative and release positions.

9. The device of claim 8, wherein the cam includes engagement surfaces that interact with the mounting member to prevent rotation of the cam upon rotation of the input member.

10. A method of selectively securing a mounting member to a hitch receiver of a vehicle, wherein the hitch receiver defines a passage within which the mounting member is received, comprising the steps of:

engaging a transverse member within an interior defined by the mounting member; and

applying a transverse force urging the mounting member into engagement with the hitch receiver, by engaging a locking member with the transverse member, and resisting movement of the locking member in a first transverse direction while moving the locking member in a second transverse direction, opposite the first transverse direction, through an opening in the mounting member into engagement with a surface defined by the hitch receiver, wherein the locking member is configured such that movement of the locking member in the second transverse direction into engagement with the surface defined by the hitch receiver applies a transverse force to the mounting member in the first transverse direction that engages the mounting member with the hitch receiver.

11. The method of claim 10, wherein the step of engaging a transverse member within an interior defined by the mounting member is carried out by engaging a pin member with the mounting member and the hitch receiver through aligned openings defined by the mounting member and the hitch receiver when the mounting member is received within the passage of the hitch receiver.

12. The method of claim 11, wherein the step of resisting movement of the locking member in the first transverse direction is carried out by engaging a first portion of the locking member with the pin member and with an internal surface defined by the mounting member adjacent the opening in the mounting member through which the pin member extends.

13. The method of claim 12, wherein the step of moving the locking member in the second transverse direction is carried out by means of an actuator arrangement carried by the mounting member.

14. The method of claim 13, wherein the locking member comprises a cam having a first portion that engages the pin member and the internal surface of the mounting member to resist movement of the cam in the first transverse direction, and a second portion spaced from the first portion that is moved in the second transverse direction into engagement with the surface of the hitch receiver by operation of the actuator arrangement.

15. The method of claim 14, wherein the actuator arrangement includes an input member movably mounted to the mounting member and an actuator member

interconnected between the input member and the cam, wherein operation of the actuator arrangement is carried out by manually engaging the input member at a location exteriorly of the mounting member.

16. The method of claim 15, wherein the step of moving the second portion of the cam into engagement with the internal surface of the hitch receiver is carried out by pivoting the cam in the second transverse direction via axial movement of the actuator member caused by operation of the input member.

17. The method of claim 16, wherein the cam includes limiting surfaces that interact with the actuator to limit movement of the cam relative to the actuator member.

18. The method of claim 16, wherein the input member is rotatably mounted to the mounting member, and wherein the input member and the cam are interconnected such that rotation of the input member causes axial movement of the actuator member.

19. The method of claim 18, including the step of engaging the cam with the mounting member to prevent rotation of the mounting member upon rotation of the input member.

20. The method of claim 18, wherein the step of manually engaging the input member is carried out so that the input member is rotated relative to the mounting member, wherein a threaded connection is interposed between the input member and the actuator member for causing axial movement of the cam.

21. A tightening arrangement for use with a mounting member configured for engagement within a passage defined by a vehicle-mounted hitch receiver that defines an internal passage, wherein the hitch receiver and the mounting member define aligned openings which receive a transverse member for preventing relative axial movement between the mounting member and the hitch receiver, comprising:

a movable engagement member interconnected with the mounting member; and

an actuator interconnected with the engagement member and with the mounting member, wherein the actuator is operable to move the engagement member between an operative position and a release position;

wherein the engagement member is configured such that, when the engagement member is in the operative position, a first area of the engagement member engages the transverse member and a second area of the engagement member extends into engagement with a surface defined by the receiver to apply a transverse force to the hitch receiver that urges the mounting member transversely into engagement with the hitch receiver, and such that, when the engagement member is in the release position, the transverse force applied to the hitch receiver is relieved so as to relieve the force urging the mounting member transversely into engagement with the hitch receiver.

22. The tightening arrangement of claim 21, wherein the mounting member defines an interior and wherein the engagement member is located within the interior of the mounting member and moves through an opening in the mounting member into engagement with the hitch receiver.

23. The tightening arrangement of claim 22, wherein the actuator is axially movable and is interconnected with the engagement member via a pivot connection for providing pivoting movement of the engagement member between the operative and release positions upon axial movement of the actuator.

24. The tightening arrangement of claim 23, wherein the actuator includes an input member that is secured to the mounting member, wherein a threaded connection is interposed between the input member and the actuator for providing axial movement of the actuator upon rotation of the input member to move the engagement member between the operative and release positions.

25. The tightening arrangement of claim 24, wherein the engagement member is configured to interact with the mounting member so as to prevent rotation of the engagement member relative to the mounting member upon rotation of the input member.

26. The tightening system of claim 23, wherein the transverse member comprises a pin member that extends through aligned openings in the hitch receiver and the mounting member, wherein movement of the engagement member to the operative position functions to apply an axial force to the pin member that prevents withdrawal of the pin member from the openings in the hitch receiver and the mounting member.

27. A system for preventing movement of a mounting member relative to the hitch receiver of a vehicle, comprising:

a movable engagement member carried by the mounting member and located within an interior defined by the mounting member;

a transversely extending member located within the interior defined by the mounting member; and

an actuator carried by the mounting member and interconnected with the engagement member, wherein the actuator, the mounting member and the engagement member are configured such that operation of the actuator moves the engagement member axially against the transversely extending member and laterally against the hitch receiver to apply a transverse force to the mounting member that urges the mounting member into engagement with the hitch receiver.

28. The system of claim 27, wherein the mounting member includes a first wall having an opening and a second wall opposite the first wall, wherein the engagement member moves through the opening in the first wall into engagement with the hitch receiver for urging the second wall against an adjacent wall defined by the hitch receiver.

29. The system of claim 28, wherein the actuator is manually operable and is carried by the mounting member so as to be accessible from the exterior of the mounting member, wherein the actuator is extendible and retractable and is pivotably interconnected with the engagement member such that extension and retraction of the actuator is operable to pivot the engagement member into engagement with the hitch receiver when the engagement member is engaged with the transversely extending member.

30. The system of claim 27, wherein the engagement member and the actuator are interconnected via a pivot connection, and wherein the engagement member and the actuator include limiting structure for limiting the range of pivoting movement of the engagement member relative to the actuator.

31. The system of claim 27, wherein the movable engagement member is movable within an interior defined by the mounting member by rotation of the actuator, and wherein the movable engagement member and the mounting member include adjacent

surfaces that cooperate upon rotation of the actuator to prevent rotation of the movable engagement member so as to provide axial movement of the engagement member upon rotation of the actuator.